

# PATENT ABSTRACTS OF JAPAN

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(21)Application number : 2000-064596 (71)Applicant : MATERIAL & INTELLIGENT  
DEVICE KENKYUSHO:KK

(22)Date of filing : 09.03.2000 (72)Inventor : ISHIYAMA SATOOKA

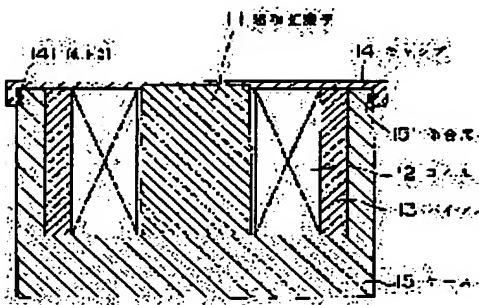
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(54) ACOUSTIC DEVICE AND DRIVE METHOD FOR MAGNETOSTRICTION  
VIBRATOR

(57)Abstract:

PROBLEM TO BE SOLVED: To miniaturize an acoustic device which employs an ultra-magnetostriction element, so as to extend application fields of the acoustic device employing the ultra-magnetostriction element.

SOLUTION: The acoustic device is provided with a magnetostriction vibration section 1, that has a coil 12 for generating magnetic field in response to an electrical signal (sound signal), a bias magnet 13 for adjusting its magnetic field, an ultra-magnetostriction element 11 that is expanded/contracted depending on the magnetic field, a case 15 containing them, and a cap 14 that seals the



case 15 in direct contact with the ultra-magnetostirictive element 15. This acoustic

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device delivers vibration obtained by transducing the sound signal through pressing the cap 14 in contact with the object to vibrate the object, thereby exhibiting the sound effect. The ultra-magnetostrictive element 11 is placed, in the case while applying pre-stress to the ultra-magnetostrictive element 11 in the depth direction of the case 15 to enhance the transducing efficiency. The acoustic device is used for a headphone to be worn on a part of a head of a person behind the ear or the like.

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#### LEGAL STATUS

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